ATTACHMENTS

ATTACHMENT A

CULTURAL RESOURCES OVERVIEW OF THE RAMONA GRASSLANDS PRESERVE

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OF THE RAMONA GRASSLANDS PRESERVE

Prepared by

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I. Introduction

This appendix provides an overview of the cultural resources of the Ramona Grasslands area, and more specific information about properties that have been and will be acquired or managed by the County of San Diego for proposed habitat restoration. General recommendations are also provided for management of cultural resources as properties are acquired, although specific recommendations cannot be made until field surveys and site inspections are completed.

The information in this report is based on a records search conducted at the South Coastal Information Center (SCIC) and limited field surveys. As a result, 145 previously recorded cultural resources were identified within the project area. However, not all of the project area has been surveyed for cultural resources, and additional sites may be present. Site locations and site map data are held by the County of San Diego as confidential information.

During the prehistoric period (the era before the founding of the San Diego Mission in 1769), Native Americans occupied the Santa Maria Valley for many thousands of years. The people living in the area at the time of Spanish contact are known as the Kumeyaay people.

The Kumeyaay Indians of southern California have been referred to as Tipai (southern area), Ipai (northern area), and as Diegueño by the Spanish because they were removed to the San Diego Mission. Different than other California Indians, the Kumeyaay speak a Yuman language, and are associated with groups east of the coast into Arizona (Luomala 1978). The extensive production and use of fired pottery by the Kumeyaay is also unique among California Indians. The Kumeyaay pottery tradition includes highly decorated vessels in a wide variety of functional shapes. Figurines made of fired clay have been found in the Santa Maria Valley.

For thousands of years, Native American groups were organized into groups of villages and resource procurement and processing locations. One village may actually have consisted of several occupied areas, as well as special use areas such as hunting camps, resource procurement and processing areas, and seasonal gathering locations. Each collective village group had a unique social organization, and the people who lived in the affiliated villages under one locational name considered themselves distinct from other groups of villages. This cultural pattern resulted in a high level of cultural diversity among the Kumeyaay.

The Santa Maria Valley was home to the Kumeyaay Indian villages collectively called Pamo for hundreds of years. The Pamo villages were seamlessly integrated into one of the last remnants of extensive grassland habitat in coastal Southern California. Surrounding and embedded within these grasslands are a variety of rare habitat types, including vernal pools, Diegan coastal sage scrub, oak woodland and riparian forests, all which would have served to support village residents. The rich environment within the Ramona grasslands provided abundant resources for the Pamo villagers. Of particular and unique importance was the native grassland. The plants and animals distinctive to this habitat contributed toward the large number of people who lived in the Pamo village complex.

The Pamo villages consisted of a complex settlement system perfectly adapted to the grasslands environment of the Santa Maria Valley. The Pamo settlement system contained a network of

villages, special activity sites for the production of stone tools, seasonal sites for gathering and processing acorns and other seeds, and religious and sacred locations. Over a period of thousands of years, several large villages and outlying activity areas were established and occupied. Dozens of these undisturbed archaeological sites still exist within the Ramona Grasslands area.

The Kumeyaay Indians had a different attitude toward the Spanish missionaries than many other California Indians. While many groups were friendly or passive toward these new immigrants, the Kumeyaay aggressively resisted attempts to control them, rebelling vigorously and frequently. They are described as "passionately devoted to the customs of their fathers" (Kroeber 1970: 711). The Diegueño continued to resist attempts to alter their culture. Ten years after the mission at San Diego was established, the Spanish sent an expedition to Pamo to take action against the group (Kroeber 1970: 712). However, eventually 92 Pamo villagers were taken to the San Diego Mission (Merriam 1968: 170).

The cultural resources within the Santa Maria Creek and Ramona Grasslands areas are particularly important to preserve because the sites exist at a landscape scale and the area contains a wide variety of residential, activity-based, and ceremonial archaeological locations. It is extremely rare in California to find an entire settlement complex of villages that can be preserved undisturbed in an intact natural landscape also supporting rare and endangered species.

II. Research Results

Research on the archaeology of the Santa Maria Valley was conducted at San Diego State University's South Coastal Information Center (SCIC) and at the San Diego Historical Society by Dr. Susan M. Hector, principal investigator. The research consisted of a record search at SCIC to identify recorded archaeological sites and determine which areas had been systematically surveyed for cultural resources; and an archival, photograph, and map search at the San Diego Historical Society. The original plat maps for the Santa Maria Grant were examined to identify any possible historic structures or features; none were observed. Aerial photographs were also examined to identify prehistoric and historic features. Dr. Hector also obtained and evaluated archaeological and cultural resource studies in the Santa Maria Valley as part of the background research for the restoration project.

Although only half of the Ramona Grassland project area has been surveyed for archaeological sites, over 140 sites have been recorded (Table 1). It is likely that many more prehistoric sites are located in the valley.

The Cagney, Voorhes Lane, Hobbs, and Hardy properties have not been systematically surveyed for cultural resources, so there were no previously recorded sites identified in those areas as a result of the record and archival searches. Informal site visits by Dr. Hector in April and July, 2002, resulted in the discovery of four sites on the Cagney property. Three of the sites are prehistoric camp sites, and the fourth is a historic bombing target (see description below). The three prehistoric sites have been recorded at the South Coast Information Center as SDI-17144, SDI-17143, and SDI-17142. Based on the results of that investigation, a systematic survey of the unsurveyed properties would most likely result in the discovery of additional cultural resources.

The vast majority of known archaeological sites along Santa Maria Creek have milling features or components. The types of milling features include mortars, basins, slicks, and cupules. The valley also has quarry sites, stone tool production areas, temporary or seasonal camps, and major village sites. The 9 major village locations known to have existed in the valley are distributed along major resource zones within the valley. Several contain stacked rock architecture, consisting of stone walls and rooms. Prehistoric Kumeyaay architecture consisted of domed, semi-subterranean shelters, ramadas, ceremonial houses, and other enclosures. The Santa Maria Creek area contains the remains of several structures built by the Kumeyaay, including rock structures and a unique ceremonial structure. The Pamo village complex included several large, permanent towns, as well as numerous specialized sites including quarries, temporary camps, and resource procurement locations.

Analyzing the information from the record searches, archives, and related archaeology reports, all of the sites in the area date to the Late Prehistoric period (1500 years before the present to 1769); this cultural period in San Diego County was a time of cultural and social complexity, permanent villages, and broad trade networks. The rich natural resources of the valley supported a large prehistoric population.

One particular archaeological site is an excellent example of a large village site located in the Ramona Grasslands area, within the Oak Country Estates project area. The Oak Country Estates property was surveyed for cultural resources by Mooney and Associates, and several of the sites were tested for significance (Carrico and Cooley 2002). One of the sites was home for 75-100 people during the Late Prehistoric period (approximately 1500-500 years ago). Although this site has only been investigated at a minimal level, it contains a rich archaeological deposit representing the large Pamo villages. Six rock enclosures were found at the site. Several rock enclosures are built into natural bedrock outcrops. Most of the rooms are adjacent to one another, and represent defensive lookouts, residential rooms, and storage rooms. The site also contains bedrock milling features, and a wide variety of pottery, stone tools and projectile points, and midden deposits.

A unique ceremonial structure was found in the Ramona Grasslands area, also within the Oak Country Estates project area. The structure consists of three parallel stone alignments, which are directed toward a monolithic split boulder, and allow a sighting to a distinct mountain pass in the distance. This feature was discovered in April, 2002, and preliminary research indicates that no other ceremonial or astronomical feature like it has ever been seen in the Kumeyaay culture area. The stone alignments are 30-50 meters in length. This structure may have statewide or national significance.

In addition to a diverse complex of prehistoric resources, the Ramona Grasslands area has important historical sites as well. The area near the Airport was used during World War II as a bombing target. The Ramona Bombing Target and Emergency Landing Field included 405 acres near the town of Ramona. Eventually, the Navy acquired enough property for a landing field, which was transferred to the County of San Diego in 1956; the County had leased the airfield since 1947. The Ramona Bombing Target was used to practice dive bombing an aircraft carrier, and is located on the Cagney property. It has been recorded at the South Coastal Information Center as P-037-024571. The Target consisted of a series of concentric rock rings to simulate

the size and shape of an aircraft carrier. Some remains from the practice bombs still remain in remote locations within the Ramona Grasslands area. Conservation of this important World War II site is important as development continues to obscure the recent history of our nation.

III. Recommendations

The County's MSCP subarea plan requires inventory and management of cultural resources included within the habitat preservation system. The following text is from the County's Framework Management Plan, which is the general guidance to be followed for the entire Preserve system.

General Management Directives: Cultural Resources

All Preserve lands will be inventoried for cultural resources. Cultural resources include historic structures, features, and landscaping as well as historic and prehistoric archaeological sites, features, and artifacts. Protection and preservation of cultural resources will comply with County of San Diego ordinances (Title 4; Public Property, Division 1: Parks and Beaches, Article 2, Section 41.113), as well as applicable state and Federal laws.

A. Inventories shall include a record search at the South Coastal Information Center, and an on-foot field survey, as well as pertinent archival and historical research.
B. Specific management plans and directives will be prepared for each Preserve to preserve and interpret cultural resources.
C. All management activities within the Preserve, including but not limited to trail construction, placement of fencing and gates, and restoration of habitat will take into consideration potential impacts to cultural resources.
D. No removal or modification of cultural resources shall occur without written approval from the Director of Parks and Recreation, County of San Diego.
E. Removal or disturbance of cultural resources shall not occur prior to completion of an approved mitigation program, such as data recovery or recordation. Preservation in place is the preferred mitigation measure.
F. Condition and status of cultural resources shall be noted as part of routine monitoring activities and remedial measures shall be taken if damage is noted.
G. Site location information will be confidential, and will be available only to qualified cultural resource staff and land managers. Site locations will not be shown on maps or divulged to the public.
H. Interpretive programs for Native American heritage, local and regional history, and prehistory will be developed for the Preserve. These may include lectures, walks, kiosks, signs, brochures, and displays, but will not include excavations, collecting of artifacts, or disclosure of confidential site locations unless an interpretive plan is developed and approved by the Director of Parks and Recreation, County of San Diego. The plan will include direct supervision by a qualified archaeologist approved by the Director of Parks and Recreation, County of San Diego.
I. Any cultural materials collected from the Preserve will be curated at a qualified curation facility.

The Area Specific Management Directives should include a provision that updated records searches be conducted as properties are added to the preserve area, to determine whether inventories have been accomplished. If the properties have not been surveyed within the past five years, updated field inventories should be done. No habitat restoration, trail construction, staging area development, or other activities should be conducted without a complete cultural resources inventory.

Properties within the Ramona Grasslands and Santa Maria Creek project areas fall into two categories: Properties that have been inventoried for cultural resources, and properties where no inventory has been done, and little or no cultural resource information is available. The following are specific recommendations for each category of property:

Properties inventoried for Cultural Resources

Montecito Ranch (Gallegos and Strudwick 1992), Oak Country Estates (Carrico and Cooley 2002), and the County's Ramona Airport (Berryman and Joyner 1990) have been surveyed for cultural resources, and site location information is available for those areas. Technical reports have been completed for these properties.

1. For each known culture resource, develop a management strategy that will consider the potential proximity of public access; measures needed to stabilize the resource from erosion or other adverse impacts; and the need for restricting public access. This strategy shall be based on field inspections to collect baseline information about the condition of the site.
2. Do not plan or construct trails or staging areas within 100' of archaeological sites. Existing trails should be redesigned to avoid archaeological sites.
3. Conduct a biannual monitoring program for cultural resources identified within the Ramona Grasslands preserve area as properties are added. Use the SDCAS monitoring protocols (Attachment A) to record baseline conditions and note changes. Any adverse changes to the condition of the site shall be immediately remedied in consultation with an archaeologist.
4. Certain archaeological sites, such as those present on Oak Country Estates, contain above ground features such as rock rooms and alignments. These sites are highly sensitive and easily vandalized. Public access to these areas should be prohibited, and a 100' buffer should be provided between the sites and any public use.
5. The use of bulldozers and other equipment that disturbs the surface of the ground should not be permitted for fire suppression activities.
6. A prescribed cattle grazing program, limiting the number and location of cattle on the properties, could be an appropriate way to control vegetation while benefiting sensitive species. Uncontrolled cattle grazing will damage archaeological sites and should not be allowed.
7. Interpretive information about the cultural resources located within the preserve should be provided to the public, without disclosing specific information about site locations. The interpretive component may consist of signage away from the sites, informative brochures, and lectures or talks. Specific programs disclosing site locations or providing direct public access to sensitive cultural resources shall be prohibited.

Properties that have not been inventoried for Cultural Resources

The Voorhes Lane easements, Hobbs, Hardy, and Cagney properties have not been surveyed for cultural resources. Some portion of Eagle Ranch may have been inventoried, but the results are not available so this property should be regarded as needing a cultural resource survey.

1. Restrict public use of those properties where no information is available until a complete cultural resource survey can be conducted.
2. No trails, staging areas, or any other improvements should be constructed until the cultural resource surveys are complete.
3. As soon as possible, conduct a complete cultural resources survey on unsurveyed properties acquired for the preserve: Hobbs, Hardy, Cagney, and Voorhes Lane. As future acquisitions are made, conduct cultural resource surveys.
4. All cultural resources identified shall be recorded at the South Coastal Information Center (SCIC). The site location information will be used for planning future improvements and will allow appropriate management of cultural resources.
5. For each site identified during the inventory, develop a management strategy that will consider the potential proximity of public access; measures needed to stabilize the resource from erosion or other adverse impacts; and the need for restricting public access.
6. Conduct a biannual monitoring program for cultural resources identified within the Ramona Grasslands preserve area as properties are added. Use the SDCAS monitoring protocols (Attachment A) to record baseline conditions and note changes. Any adverse changes to the condition of the site shall be immediately remedied in consultation with an archaeologist.
7. Certain archaeological sites contain above ground features such as rock rooms and alignments. These sites are highly sensitive and easily vandalized. Public access to these areas should be prohibited, and a 100' buffer should be provided between the sites and any public use.
8. The use of bulldozers and other equipment that disturbs the surface of the ground should not be permitted for fire suppression activities.
9. A prescribed cattle grazing program, limiting the number and location of cattle on the properties, could be an appropriate way to control vegetation while benefiting sensitive species. Uncontrolled cattle grazing will damage archaeological sites and should not be allowed.
10. Interpretive information about the cultural resources located within the preserve should be provided to the public, without disclosing specific information about site locations. The interpretive component may consist of signage away from the sites, informative brochures, and lectures or talks. Specific programs disclosing site locations or providing direct public access to sensitive cultural resources shall be prohibited.

IV. References Cited

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Table 1. Records Search Results

Site No. (SDI-)	Village	Seasonal Camp	Milling Site	Quarry Site	Ceremonial Site	Lithic Artifact Scatter	Historic Site	Other	Comments
5796		X	X						
5797		X							
5798			X						
5946			X						
5947		X	X						
6058			X						
6059		X	X						Testing done; quartz projectile point found
6060						X			
6061			X						
6063			X						
6064			X						
6065						X			
6066			X			X			
7322	X		X		X				Chalcedony projectile point, cupule features
7323			X						
7751			X						
7752			X						
7754			X			X			
7757	X		X						Rock rooms
7760		X	X						Stone alignment
7761						X			
7768			X						
7769			X						
7770	X		X						Biface
8248			X			X			Hearth
8249							X		Stone wall and cellar
8866									
9709						X			
9727			X			X			
9901		X	X						
10257			X						
10258			X			X			
10259		X	X				X		Stacked rock features and walls
10260			X						
10261			X						
10262			X			X			Serrated chalcedony biface
10263			X						
10264			X						
10265			X						

Site No. (SDI-)	Village	Seasonal Camp	Milling Site	Quarry Site	Ceremonial Site	Lithic Artifact Scatter	Historic Site	Other	Comments
10267			X						
10268			X						
10270			X						
10271			X						
10272			X		X				Cupule features
10273			X						
10274			X						
10275			X						
10276			X						
10277			X						
10279			X						
10280			X				X		Purpled glass
10281			X						
11083			X						
11084			X						
11085			X						
11086			X			X			
11087			X						Cottonwood Triangular projectile point
11088			X						
11105			X						
11106			X						
11108			X						
11109			X						
11112			X						
11113			X						
11114			X						
11115			X						
11116			X						
11117			X						
11118			X						
11119			X						
11120			X						
11121			X						
11122		X	X						Obsidian flakes
11123			X						
11124			X						
11125			X						Heavily used
11126			X						
11127			X						
11128			X						
11129			X						
11130			X						Two areas of milling
11131			X						
11132			X						

Site No. (SDI-)	Village	Seasonal Camp	Milling Site	Quarry Site	Ceremonial Site	Lithic Artifact Scatter	Historic Site	Other	Comments
11133			X						
11471			X						
11472			X						
11925		X							
11926			X						
11927			X						Rock shelter
11928					X			Rock art	
12022	X		X						Many milling features, chert and obsidian flakes
12041			X						
12125			X						
12144							X		Fenton Ranch house remnants
12158			X						
12159			X						
12473	X		X						Complex village site with activity areas; pre-1900 school site
12474			X						
12476	X		X				X		In addition to prehistoric village, 1850s adobe house on site--Montecito ranch house
12477						X			
12478			X						
12480		X	X				X		Historic dump in area
12481		X	X						
12482			X	X					
12483		X							Chert projectile point
12484			X						
12485						X			
12486		X							Two projectile points: one is serrated side-notched
12487		X	X						
12488				X					Quartz quarry; worked flakes and tools found at site
12489	X		X						Cottonwood Triangular projectile point
12490		X							
12491						X			
12492						X			
12493				X					Quartz quarry with worked flakes
12494		X	X						
12495			X			X			

Site No. (SDI-)	Village	Seasonal Camp	Milling Site	Quarry Site	Ceremonial Site	Lithic Artifact Scatter	Historic Site	Other	Comments
12496		X							Rock shelter north of site not investigated
12497	X								This site was being pot-hunted in 1991
12498			X						
12499			X						
12501			X						
12503						X	X		Concrete pad
12504						X			
12505		X							
12693			X						
12742	X		X						Four Cottonwood Triangular projectile points (2 quartz, one obsidian, one chert), obsidian flakes
12743							X		Possibly old Bandy homestead; no structure remains
14095			X						
14096			X						
14101			X			X			
14161			X			X			
14341			X						
15780			X						
16095			X						
16096							X		Historic earthen dam
16097			X						
16173			X						
16174			X						
16175	X		X						Residents have used metates from the site to make a monument; it is called "Metate Park"
17142		X		X					Cagney property
17143		X	X						Cagney property
17144			X			X			Cagney property
P-037-024554					X				Two rock alignments directed at a monolithic split rock; there may be a third alignment
P-037-024571							X		Cagney property
Total: 145 recorded sites									

ATTACHMENT B

PLANT SPECIES LIST

ATTACHMENT B
PLANT SPECIES LIST

Common Name	Scientific Name	Federal	State	County of San Diego
San Diego thornmint	*Acanthomintha ilicifolia*	FT	SE	A
Blow-wives	*Achyrachaena mollis*			
Desert crested wheatgrass	*Agropyron desertorum*			
Pigweed	*Amaranthus* sp.			
Western ragweed	*Ambrosia psilostachya*			
Fiddleneck	*Amsinckia* sp.			
Scarlet pimpernel	*Anagallis arvensis*			
Yerba mansa	*Anemopsis californica*			
Mayweed	*Anthemis cotula*			
Nuttall's snapdragon	*Antirrhinum nuttallianum* ssp. ?			
Common celery	*Apium graveolens*			
California sagebrush	*Artemisia californica*			
Mugwort	*Artemisia douglasiana*			
Tarragon	*Artemisia drancunculus*			
Giant reed	*Arundo donax*			
California milkweed	*Asclepias californica*			
Coulter's saltbush	*Atriplex coulteri*			A
Parish's brittlescale	*Atriplex parishii* var. *parishii*			A
Slender wild oat	*Avena barbata*			
Wild oat	*Avena fatua*			
Mule fat	*Baccharis salicifolia*			
Black mustard	*Brassica nigra*			
California brickellbush	*Brickellia californica*			
Dwarf brodiaea	*Brodiaea terrestris* ssp. *kernensis*			
Ripgut grass	*Bromus diandrus*			
Soft chess	*Bromus hordeaceus*			
Foxtail chess	*Bromus madritensis* ssp. *rubens*			
Red maids	*Calandrinia ciliata*			
California large-leaf filaree	*California macrophylla*			B
Round-leaved filaree	*California macrophylla*			B
Water-starwort	*Callitriche* sp.			
Splendid mariposa lily	*Calochortus splendens*			
Morning-glory	*Calystegia macrostegia* ssp. ?			
Primrose	*Camissonia claviformis* ssp. ?			
Sandysoil sun cup	*Camissonia strigulosa*			
Rusty sedge	*Carex subfusca*			
Safflower	*Carthamus tinctorius*			
Owl's-clover	*Castilleja densiflora* ssp. *densiflora*			
Purple owl's-clover	*Castilleja exserta* ssp. *exserta*			
Tocalote	*Centaurea melitensis*			
Canchalagua	*Centaurium venustum*			

Common Name	Scientific Name	Federal	State	County of San Diego
Southern tarplant	*Centromadia parryi* ssp. *australis*			A
Common chaffweed	*Centunculus minimus*			
Mouse-ear chickweed	*Cerastium glomeratum*			
Spotted spurge	*Chamaesyce maculata*			
Pigweed	*Chenopodium* sp.			
Soap plant	*Chlorogalum parviflorum*			
Mediterranean chicory	*Cichorium intybus*			
Clarkia	*Clarkia purpurea* ssp. ?			
Miner's-lettuce	*Claytonia perfoliata* ssp. *?*			
Virgin's bower	*Clematis sp.*			
Small-flower bindweed	*Convolvulus simulans*			D
Horseweed	*Conyza* sp.			
Common sand-aster	*Corethrogyne filaginifolia* var. *filaginifolia*			
California-aster	*Corethrogyne filaginifolia* var. *filaginifolia*			
African brass-buttons	*Cotula coronopifolia*			
Water pygmyweed	*Crassula aquatica*			
Pygmyweed	*Crassula connata*			
Alkali weed	*Cressa truxillensis*			
Dove weed	*Croton setigerus*			
Prickle grass	*Crypsis schoenoides*			
Cryptantha	*Cryptantha* sp.			
Coyote melon	*Cucurbita palmata*			
Dodder	*Cuscuta* sp.			
Artichoke thistle	*Cynara cardunculus*			
Bermuda grass	*Cynodon dactylon*			
Nutsedge	*Cyperus* sp.			
Western jimson weed	*Datura wrightii*			
Rattlesnake weed	*Daucus pusillus*			
Fascicled tarweed	*Deinandra fasciculata*			
Annual hairgrass	*Deschampsia danthonioides*			
Blue dicks	*Dichelostemma capitatum* ssp. *capitatum*			
Saltgrass	*Distichlis spicata*			
Padre's shooting star	*Dodecatheon clevelandii* ssp. *clevelandii*			
Toothed downingia	*Downingia cuspidata*			
Mexican tea	*Dysphania ambrosioides*			
Pale spike-rush	*Eleocharis macrostachya*			
Tall wheatgrass	*Elytrigia pontica* ssp. *pontica*			
Willow herb	*Epilobium ciliatum* ssp. *ciliatum*			
Smooth boisduvalia	*Epilobium pygmaeum*			
Tall buckwheat	*Eriogonum elongatum* var. *elongatum*			

Common Name	Scientific Name	Federal	State	County of San Diego
Coast California buckwheat	*Eriogonum fasciculatum* var. *fasciculatum*			
Mountain buckwheat	*Eriogonum fasciculatum* var. *polifolium*			
Long-beak filaree	*Erodium botrys*			
Red-stem filaree	*Erodium cicutarium*			
White-stem filaree	*Erodium moschatum*			
Reticulate-seed spurge	*Euphorbia spathulata*			
Narrow-leaf filago	*Filago gallica*			
Bedstraw	*Galium angustifolium*			
Nit grass	*Gastridium ventricosum*			
Carolina geranium	*Geranium carolinianum*			
Purple-spot gilia	*Gilia clivorum*			
California everlasting	*Gnaphalium californicum*			
Rayless gumplant	*Grindelia camporum* var. *bracteosa*			
Barbgrass	*Hainardia cylindrica*			
Saw-toothed goldenbush	*Hazardia squarrosa* var. *grindelioides*			
Crete hedypnois	*Hedypnois cretica*			
Peak rush-rose	*Helianthemum scoparium*			
Western sunflower	*Helianthus annuus*			
Salt heliotrope	*Heliotropium curassavicum*			
Telegraph weed	*Heterotheca grandiflora*			
Goldenaster	*Heterotheca sessiliflora*			
Short-pod mustard	*Hirschfeldia incana*			
Graceful tarplant	*Holocarpha virgata* ssp. *elongata*			D
Little barley	*Hordeum intercedens*			C
Mediterranean barley	*Hordeum marinum* ssp. *gussoneanum*			
Hare barley	*Hordeum murinum* ssp. *leporinum*			
Smooth cat's-ear	*Hypochaeris glabra*			
Spreading goldenbush	*Isocoma menziesii* var. *menziesii*			
Howell's quillwort	*Isoetes howellii*			
Mexican rush	*Juncus arcticus* var. *mexicanus*			
Toad rush	*Juncus bufonius* var. *bufonius*			
Mariposa rush	*Juncus dubius*			
Iris-leaved rush	*Juncus xiphiodes*			
Prickly lettuce	*Lactuca serriola*			
Goldentop	*Lamarckia aurea*			
Dwarf peppergrass	*Lepidium latipes* var. *latipes*			
Shining peppergrass	*Lepidium nitidum* var. *nitidum*			
Veiny peppergrass	*Lepidium oblongum* var. *insulare*			
Creeping wild rye	*Leymus triticoides*			
Flowering-quillwort	*Lilaea scilloides*			

Common Name	Scientific Name	Federal	State	County of San Diego
Southern mudwort	*Limosella acaulis*			
Blue toad flax	*Linaria canadensis*			
Italian ryegrass	*Lolium multiflorum*			
Silver-leaf lotus	*Lotus argophyllus* var. *argophyllus*			
Grab lotus	*Lotus hamatus*			
Spanish clover	*Lotus purshianus* var. *purshianus*			
Lotus	*Lotus salsuginosus* var. ?			
Miniature lupine	*Lupinus bicolor*			
Arroyo lupine	*Lupinus succulentus*			
Grass poly	*Lythrum hyssopifolia*			
Laurel sumac	*Malosma laurina*			
Alkali-mallow	*Malvella leprosa*			
Man-root	*Marah macrocarpus* var. *macrocarpus*			
Horehound	*Marrubium vulgare*			
Hairy clover fern	*Marsilea vestita ssp. vestita*			
Pineapple weed	*Matricaria matricarioides*			
California burclover	*Medicago polymorpha*			
White sweetclover	*Melilotus albus*			
Sourclover	*Melilotus indicus*			
Yellow sweetclover	*Melilotus officinalis*			
Small-flower microseris	*Microseris douglasii* ssp. *platycarpha*			D
Seep monkeyflower	*Mimulus guttatus*			
Common muilla	*Muilla maritima*			
Purple needlegrass	*Nassella pulchra*			
Great marsh evening-primrose	*Oenothera elata* ssp. *hirsutissima*			
Prickly-pear	*Opuntia sp.*			
Osmadenia	*Osmadenia tenella*			
Kikuyu grass	*Pennisetum clandestinum*			
Phacelia	*Phacelia ramosissima* var. ?			
Branching phacelia	*Phacelia ramosissima* var. *latifolia*			
Lemmon's canary grass	*Phalaris lemmonii*			
Paradox canary grass	*Phalaris paradoxa*			
Bristly ox-tongue	*Picris echioides*			
American pillwort	*Pilularia americana*			
Smilo grass	*Piptatherum miliaceum*			
Adobe popcornflower	*Plagiobothrys acanthocarpus*			
Rusty popcornflower	*Plagiobothrys nothofulvus*			
Coast popcornflower	*Plagiobothrys undulatus*			
Prairie plantain	*Plantago elongata*			
Dot-seed plantain	*Plantago erecta*			
Dwarf plantain	*Plantago virginica*			

Common Name	Scientific Name	Federal	State	County of San Diego
Cream cups	*Platystemon californicus*			
Annual bluegrass	*Poa annua*			
Kentucky bluegrass	*Poa pratensis* ssp. *pratensis*			
One-sided bluegrass	*Poa secunda* ssp. *secunda*			
Common knotweed	*Polygonum arenastrum*			
Knotweed/ smartweed	*Polygonum* sp.			
Annual beard grass	*Polypogon monspeliensis*			
Fremont cottonwood	*Populus fremontii* ssp. *fremontii*			
Common purslane	*Portulaca oleraceae*			
Dwarf woolly-heads	*Psilocarphus brevissimus* var. *brevissimus*			
Coast live oak	*Quercus agrifolia* var. *agrifolia*			
California buttercup	*Ranunculus californicus*			
Wild radish	*Raphanus sativus*			
Skunkbrush	*Rhus trilobata*			
Water cress	*Rorippa nasturtium-aquaticum*			
Curly dock	*Rumex crispus*			
Willow dock	*Rumex salicifolius* var. ?			
Narrow-leaf willow	*Salix exigua*			
Goodding's black willow	*Salix gooddingii*			
Red willow	*Salix laevigata*			
Arroyo willow	*Salix lasiolepis*			
Russian thistle	*Salsola tragus*			
Blue elderberry	*Sambucus mexicana*			
Sanicle	*Sanicula* sp.			
Olney's bulrush	*Schoenoplectus americanus*			
California bulrush	*Schoenoplectus californicus*			
Common threesquare	*Schoenoplectus pungens*			
Common threesquare	*Schoenplectus pungens*			
California figwort	*Scrophularia californica* ssp. *floribunda*			
Bigelow's spike-moss	*Selaginella bigelovii*			
Checker-bloom	*Sidalcea malviflora* ssp. *sparsifolia*			
Common catchfly	*Silene gallica*			
Milk thistle	*Silybum marianum*			
Charlock	*Sinapis arvensis*			
Blue-eyed-grass	*Sisyrinchium bellum*			
Nightshade	*Solanum* sp.			
Sow thistle	*Sonchus* sp.			
Buccone's sand-spurry	*Spergularia bocconi*			
Common chickweed	*Stellaria media*			
Salt-cedar	*Tamarix* sp.			
Puncture vine	*Tribulus terrestris*			
Vinegar weed	*Trichostema lanceolatum*			
Tree clover	*Trifolium ciliolatum*			

Common Name	Scientific Name	Federal	State	County of San Diego
Clover	*Trifolium depauperatum* var. *truncatum*			
Strawberry clover	*Trifolium fragiferum*			
Rose clover	*Trifolium hirtum*			
Alsike clover	*Trifolium hybridum?*			
Maiden clover	*Trifolium microcephalum*			
White tip clover	*Trifolium variegatum*			
Southern cattail	*Typha domingensis*			
Hoary nettle	*Urtica dioica* ssp. *holosericea*			
Moth mullein	*Verbascum blattaria*			
Water speedwell	*Veronica anagallis-aquatica*			
Mexican purslane speedwell	*Veronica peregrine* ssp. *xalapensis*			
Purple vetch	*Vicia benghalensis*			
Narrow-leaf vetch	*Vicia sativa* ssp. *nigra*			
Hairy vetch	*Vicia villosa* ssp. ?			
Johnny-jump-up	*Viola pedunculata*			
Six-weeks fescue	*Vulpia bromoides*			
Hairy rat-tail fescue	*Vulpia myuros* var. *hirsuta*			
Cocklebur	*Xanthium strumarium*			
Death camas	*Zigadenus venenosus* var. *venenosus*			

FT = Federally Threatened
SE = California Endangered
County List A = plants rare, threatened or endangered in California and elsewhere,
County List B = plants rare, threatened or endangered in California but more common elsewhere
County List C = plants that maybe quite rare, but need more information to determine their true rarity status
County List D = plants of limited distribution and are uncommon, but not presently rare or endangered

ATTACHMENT C

ANIMAL SPECIES LIST

ATTACHMENT C
ANIMAL SPECIES LIST

Common Name	Scientific Name	Federal	State	County of San Diego
Invertebrates				
Western tiger swallowtail	*Papilio rutulus rutulus*			
Lorquin's admiral	*Basilarchia lorquini*			
Buckeye	*Junonia coenia*			
San Diego fairy shrimp	*Branchinecta sandiegonensis*	**FE**		**Group 1**
Crayfish	*Procambarus clarkii*			
Fishes				
Mosquitofish	*Gambusia affinis*			
Largemouth bass	*Micropterus salmoides*			
Green sunfish	*Lepomis cyanellus*			
Amphibians				
Pacific tree frog	*Pseudacris regilla*			
Western spadefoot	*Spea hammondi*		**CSC**	**Group 2**
Arroyo toad	*Bufo californicus*	**FE**		**Group 1**
Western toad	*Bufo boreas*			
Bullfrog	*Rana catesbeiana*			
Reptiles				
Two-striped garter snake	*Thamnophis hammondi*		**CSC**	**Group 1**
Gopher snake	*Pituophis catenifer annecten*			
Coachwhip	*Masticophis flagellum*			
California kingsnake	*Lampropeltis getula*			
Birds				
Great egret	*Casmerodius albus*			
Snowy egret	*Egretta thula*			
Canada geese	*Branta canadensis*			
Mallard	*Anas platyrhynchos*			
Cinnamon teal	*Anas cyanoptera*			
Turkey vulture	*Cathartes aura*			
White-tailed kite	*Elanus leucurus*		**FP**	**Group 1**
Cooper's hawk	*Accipiter cooperii*		**CSC***	**Group 1**
Red-shouldered hawk	*Buteo lineatus*			**Group 1**
Red-tailed hawk	*Buteo jamaicensis*			
Zone-tailed hawk	*Buteo abonotatus*			
Ferruginous hawk	*Buteo regalis*		**CSC****	**Group 1****
Northern harrier	*Circus cyaneus*		**CSC***	**Group 1**
American kestrel	*Falco sparverius*			
Merlin	*Falco columbarius*		**CSC****	**Group 2****
Praire falcon	*Falco mexicanus*		**CSC***	**Group 1**
Golden eagle	*Aquila chrysaetos*		**CSC, FP**	**Group 1**
Bald eagle	*Haliaeetus leucocephalus*		**SE, FP**	**Group 1****
Barn owl	*Tyto alba*			**Group 2**
Great-horned owl	*Bubo virginianus*			

Common Name	Scientific Name	Federal	State	County of San Diego
Burrowing owl	*Athene cunicularia*		**CSC***	**Group 1**
Virginia rail	*Rallus limicola*			
Sora	*Porzana carolina*			
Killdeer	*Charadrius vociferus*			
Mourning dove	*Zenaida macroura*			
Anna's hummingbird	*Calypte anna*			
Acorn woodpecker	*Melanerpes formicivorus*			
Nuttall's woodpecker	*Picoides nuttallii*			
Northern flicker	*Colaptes cafer*			
Western wood-pewee	*Contopus sordidulus*			
Willow flycatcher	*Empidonax traillii estimus****	**FE***	**SE***	**Group 1**
Black phoebe	*Sayornis nigricans*			
Say's phoebe	*Sayornis saya*			
Ash-throated flycatcher	*Myiarchus cinerascens*			
Cassin's kingbird	*Tyrannus vociferans*			
Western kingbird	*Tyrannus verticalis*			
Loggerhead shrike	*Lanius ludovicianus*		**CSC***	**Group 1**
Warbling vireo	*Vireo gilvus*			
Western scrub-jay	*Aphelocoma californica*			
American crow	*Corvus brachyrhynchos*			
Common raven	*Corvus corax*			
N. rough-winged swallow	*Stelgidopteryx serripennis*			
Oak titmouse	*Baeolophus inornatus*			
Bushtit	*Psaltriparus minimus*			
Bewick's wren	*Thryomanes bewickii*			
House wren	*Troglodytes aedon*			
Coastal California gnatcatcher	*Polioptila californica californica*	**FT**		**Group 1**
Western bluebird	*Sialia mexicana*			**Group 2**
Northern mockingbird	*Mimus polyglottos*			
European starling	*Sturnus vulgaris*			
Yellow warbler	*Dendroica petechia*		**CSC**	**Group 2**
Common yellowthroat	*Geothlypis trichas*			
Spotted towhee	*Pipilo maculatus*			
California towhee	*Pipilo crissalis*			
Lark sparrow	*Chondestes grammacus*			
Grasshopper sparrow	*Ammodramus savannarum*			**Group 1**
Song sparrow	*Melospiza melodia*			
Black-headed grosbeak	*Pheucticus melanocephalus*			
Blue grosbeak	*Guiraca caerulea*			

Common Name	Scientific Name	Federal	State	County of San Diego
Red-winged blackbird	*Agelaius phoenicius*			
Western meadowlark	*Sturnella neglecta*			
Brown-headed cowbird	*Molothrus ater*			
Hooded oriole	*Icterus cucullatus*			
Bullock's oriole	*Icterus galbula*			
House finch	*Carpodacus mexicanus*			
Lesser goldfinch	*Carduelis psaltria*			
American goldfinch	*Carduelis tristis*			
House sparrow	*Passer domesticus*			
Mammals				
Botta's pocket gopher	*Thomomys bottae*			
Dulzura kangaroo rat	*Dipodomys simulans*			
Stephens' kangaroo rat	*Dipodomys stephensi*	**FE**	**ST**	**Group 1**
Audubon's cottontail	*Sylvilagus audubonii*			
California ground squirrel	*Spermophilus beecheyi*			
Long-tailed weasel	*Mustela frenata*			
Gray fox	*Urocyon cinereoargenteus*			
Coyote	*Canis latrans*			
Mule deer	*Odocoileus hemionus*			**Group 2**
Bobcat	*Felis rufus*			
Mountain lion	*Felis concolor*			**Group 2**

FE = Federally Endangered
FT = Federally Threatened
SE = California Endangered
ST = California Threatened
CSC = California Species of Special Concern
FP = California Fully Protected
County Group 1 = animals threatened or endangered or with specific natural history requirements
County Group 2 = animals becoming less common, but not yet so rare that extirpation or extinction is imminent without immediate action
* = Nesting locations
** = Wintering locations
*** = A single willow flycatcher was detected on a single date and was not confirmed to subspecies.

ATTACHMENT D

SDCAS MONITORING PROTOCOLS

SAN DIEGO COUNTY ARCHAEOLOGICAL SOCIETY

SITE MONITORING FORM

Site Number(s) _____ Management Agency _____

Owner (if different) _____

Type of site (midden, adobe ruins, etc.) and description _____

_____

_____

_____

Site dimensions: long axis _____ orientation _____ short axis _____ orientation _____

Maximum depth _____

Describe location and environmental setting of site (riverbank, field, etc.) _____

_____

_____

_____

Artifact classes in site _____

_____

_____

Is resource loss imminent? _____yes _____no

Estimated immediacy of loss _____

_____

Estimated rate of loss (feet/year, etc.) _____

_____

Percentage of ground cover: _____% grasses_____%bushes ____%tree_____other

Causes of adverse impact: _____agricultural_____development_____public use

_____sheet erosion _____shoreline erosion _____vandalism _____looting _____off-road vehicles _____cyclical inundation _____other (name)

If **agricultural**, identify primary crops and type of impact (row crops, fruit trees, type of plowing)

_____

_____

If **development,** describe _____

_____

_____

If **public use**,describe _____

_____

_____

_____

If **sheet erosion**, describe ground surface and indicate direction of source of water and any other information _____

_____

_____

_____

If **shoreline or streambank erosion**, specify primary cause of erosion (current, waves), soil

type, estimated equilibrium slope _____

If **vandalism**, describe types of activities _____

If **looting**, describe extent_____

If **off-road vehicles**, describe type of impact and type of vehicles, and frrequency of intrusion

If **cyclical inundation**, indicate frequency and maximum depth of water _____

Any other observtions (i.e., were there visitors to the site while you were there?) _____

If this site included in a regular site monitoring program? If so, describe _____

When should this site next be monitored and why? _____

Any other recommendations?_____

Describe photo stations used _____

Photos taken: Type of film (slide, color, B&W print) _____Roll number ___Frame numbers_____ Type of camera and lens_____Photographer_____

Date of monitoring _____ Time of monitoring _____
Names of monitors _____

Attach site map showing areas of impact and other important information.

ATTACHMENT E

FIELD PROTOCOLS AND FIELD FORMS

ATTACHMENT E
FIELD PROTOCOLS AND FIELD FORMS

PROPOSED SKR MONITORING PROTOCOLS

Objectives: (1) To assess the distribution and abundance of SKR and the characteristics of SKR habitat in the Ramona Grasslands Preserve.

(2) To provide information allowing the grazing regime to be altered to suit management objectives for grassland habitats.

SKR Burrow counts and habitat quality at sentinel sites – used to determine the density of SKR at a series of sentinel sites established across a range of habitat quality within suitable SKR habitat. SKR habitat quality, and thus SKR abundance, is expected to fluctuate with annual variations in rainfall and grazing intensity. Information on fluctuations in abundance in relation to the conditions present in a particular area will quantify the occupancy and relative abundance of SKR within suitable habitat in the Preserve, which will allow Preserve managers to ensure the population of SKR in the Preserve remains extant and implement timely management intervention as needed.

- Select 15-20 sentinel sites across a range of SKR habitat quality but within core habitat areas.
- At each site, establish a 50-m radius circular plot and estimate the density of burrows within the plot.
- Within each plot, visually estimate relevant SKR habitat characteristics, including percent cover of shrubs, grasses, forbs, bare ground, and thatch and grass height.

PROPOSED GRASSLAND MONITORING PROTOCOLS

Objectives: (1) To assess the quantitative structure and composition of grassland habitats resulting from the managed grazing regime employed in the Ramona Grasslands Preserve.

(2) To provide information allowing the grazing regime to be altered to suit management objectives for grassland habitats.

Point-intercept methodology – used to measure species composition, structure, and thatch accumulation at the peak of the annual growing season. These data can be correlated with biomass estimates collected both during the peak growing season and at the end of "brown-up" (residual dry matter or RDM) and grazing intensity (difference between peak biomass and RDM) to potentially allow changes in management earlier in the year.

- At each monitoring location, establish a 100-meter transect along a randomly selected compass bearing.
- At every meter along these transect, drop a pin vertically, and record the species contacting the pin and the height of the tallest member of each growth form (grass, forb, shrub, thatch). Bare ground should be recorded when touched by the pin.
- Record any disturbance visible at each pin location (i.e., at each meter along the transect), these could include gophers, ant clearings, cattle trail, etc.
- Visually estimate the grazing intensity (High, Moderate, None)
- Clip all above ground biomass within 4 0.96 ft^2 circle or hoops, every 25 m along the 100-meter transect within each plot. Place clippings into an individually labeled paper bag (plot ID, sample #, and date), and allow to dry. The hoop size is 13.25 inches inside diameter which equals 0.96 sq. feet. Results are calculated by weighing the RDM clipped in grams and multiplying by 100, which equals pounds RDM per acre (i.e., grams/hoop x 100 = lbs/acre).
- Take a photo in each cardinal direction at the stake within each plot. Record direction, shutter speed, and F-stop for each photo.

Belt transect methodology – used to measure the species richness in each plot location.

- Record all species along a 2-m wide belt at each monitoring location
- Count all Nasella bunches within the 2-m wide belt at each location.

PROPOSED VERNAL POOL, VERNAL SWALE, AND ALKALI PLAYA MONITORING PROTOCOLS

Objectives: (1) To assess the structure and composition of vernal pool habitats resulting from the managed grazing regime employed in the Ramona Grasslands Preserve.

(2) To provide information allowing the grazing regime to be altered to suit management objectives for vernal pool habitats.

Quadrat methodology – used to measure species composition and thatch accumulation at the peak of the annual growing season (i.e., following pool drawdown). Note presence of water, animal species of interest (e.g., spadefoot toads, fairy shrimp).

- At each monitoring location, randomly establish a transect across the pool, a second transect perpendicular to the first can be established if need to increase quadrat sampling area (depending on pool size)
- Divide the pool into three zones based on pool depth: 1) center (deepest area), 2) intermediate, and 3) pool edge (upland transition). Quadrat sampling (minimum of three to five quadrats) will be conducted within each of the three zones. Quadrat locations within each zone should be randomly or haphazardly selected using the two transects.
- Record cover of all species within 10 cm x 50 cm quadrats. Record cover of bare ground or thatch as appropriate.
- Visually estimate the grazing intensity within each quadrat (High, Moderate, None).
- Record disturbances within each quadrat, such as cow hoof prints.
- List all species found in the pool, whether or not in a quadrat.
- Take a photo in each cardinal direction from the edge of every pool, such that the pool is captured in each photo. Record direction, shutter speed, and F-stop for each photo.

PROPOSED TARGET SPECIES MAPPING PROTOCOLS

Objectives: (1) To assess the structure and composition of vernal pool habitats resulting from the managed grazing regime employed in the Ramona Grasslands Preserve.

(2) To provide information allowing the grazing regime to be altered to suit management objectives for vernal pool habitats.

Mapping and estimation of target native grassland vernal pool and alkali playa species –used to map and visually estimate the density/abundance of target native forbs and grasses (i.e., *Nasella pulchra*, *Convolvulus simulans*, *California* (*Erodium*) *macrophyllum*, *Centromadia parryi*, *Holocarpha virgata*, *Hordeum intercedens, Downingia cuspidata, Eryngium aristulatum* var. *parishii* [not currently known from the Grasslands], *Myosurus minimus* ssp. *apus, Navarretia fossalis, Atriplex coulteri, Atriplex parishii*) to track distribution and abundance across the grasslands.

- Generally delineate the extent of patches of each target species on field maps or with GPS.
- Visually estimate the density or abundance of each target species in each patch and record. Use a small quadrat if this helps.

PROPOSED RIPARIAN MONITORING PROTOCOLS

Objectives: (1) To assess the structure and composition of riparian habitats resulting from the managed grazing regime employed in the Ramona Grasslands Preserve.

(2) To provide information allowing the grazing regime to be altered to suit management objectives for riparian habitats.

Line-intercept methodology – used to measure species composition and vertical structure in the tree and shrub layers.

- At each monitoring location, establish a transect reaching from one side of the channel to the other and perpendicular to the channel.
- Measure the length along each transect that is intercepted by all species in both the shrub and tree layer.
- Take a photo of the habitat from each end of the transect and upstream and downstream from the center of the transect. Record direction, shutter speed, and F-stop for each photo.

Line-intercept methodology – used to measure species composition in the herbaceous layer.

- Every one-half meter drop a pin vertically and record the species touched by the pin.

Belt transect methodology – used to count the numbers of individual trees and shrubs at each location

- Record and categorize as seedlings or adults all species along a 2-m wide belt at each monitoring location

FIELD FORMS

SKR Habitat and Density Assessment

Date _____ **Location** _____

Observers _____

Plot # _____ Coordinates _____

Habitat Description _____

Habitat Characters

%Shrub	_____<5	_____5-10	_____10-20	_____>20
Grass Cover	_____low	_____mod.	_____high	____v. high
Forb Cover	_____low	_____mod.	_____high	____v. high
Forb:Grass	_____<1:1	_____1-2:1	_____2-4:1	_____>4:1
%Bare	_____<10	_____10-20	_____20-50	_____>50
Grass Ht.	____<0.5m	____0.5-1m	____1-1.5m	____>1.5m
Thatch Cover	_____low	_____mod.	_____high	____v. high

burrow density (#/200m2)

_____none (0)
_____trace (<1)
_____low (1-4)
_____mod (4-14)
_____high (>14)

Plot # _____ Coordinates _____

Habitat Description _____

Habitat Characters

%Shrub	_____<5	_____5-10	_____10-20	_____>20
Grass Cover	_____low	_____mod.	_____high	____v. high
Forb Cover	_____low	_____mod.	_____high	____v. high
Forb:Grass	_____<1:1	_____1-2:1	_____2-4:1	_____>4:1
%Bare	_____<10	_____10-20	_____20-50	_____>50
Grass Ht.	____<0.5m	____0.5-1m	____1-1.5m	____>1.5m
Thatch Cover	_____low	_____mod.	_____high	____v. high

burrow density (#/200m2)

_____none (0)
_____trace (<1)
_____low (1-4)
_____mod (4-14)
_____high (>14)

Ramona Grasslands Preserve
Grassland Botany Field Form

Grassland Plot: ________ Monitors: ______________________ Date: ______________________

Compass: ________

Ground Cover: BG = BareGround, R = Rock, T = Thatch, D = Dung
Grazing Intensity: H= High, M = Moderate, N = None
Disturbance: OG = Old Gopher, NG= New Gopher, N= None, AT= Animal Trail

Point	Species	Height	G. Cover	Grazing	Disturb	Point	Species	Height	G. Cover	Grazing	Disturb

Notes

Ramona Grasslands Preserve
Grassland Botany Field Form

Plot ID ____________________ Date ____________________

No. Nasella

Species List		Species List	Species List		Species List	Species List

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Vernal Pool ________ Monitors: ________________________ Date: ____________________

Zone: C = Center, I = Intermediate, E = edge
Ground Cover: BG = BareGround, R = Rock, T = Thatch, D = Dung

Compass: ______ Grazing Intensity: H= High, M = Moderate, N = None
Disturbance: OG = Old Gopher, NG= New Gopher, N= None, AT= Animal Trail, H = hoof-print

Quad	Zone	Species	Cover	Grazing	Disturb	Quad	Zone	Species	Cover	Grazing	Disturb

Notes:

Ramona Grasslands Preserve
Vernal Pool Botany Field Form

Pool ID		Date:	
Species List	Species List	Species List	Species List

Santa Maria Creek - Proposition 13 Survey Year: _____

Arroyo Toad Survey Form

Survey Record

Site ID _____ Date _____

Observer(s) _____

Site ID _____ Date _____

Observer(s) _____

Site ID _____ Date _____

Observer(s) _____

Site ID _____ Date _____

Observer(s) _____

Site ID _____ Date _____

Observer(s) _____

Site ID _____ Date _____

Observer(s) _____

Site ID _____ Date _____

Observer(s) _____

Site ID _____ Date _____

Observer(s) _____

Site ID _____ Date _____

Observer(s) _____

Site ID _____ Date _____

Observer(s) _____

Site ID _____ Date _____

Observer(s) _____

Site ID _____ Date _____

Observer(s) _____

Santa Maria Creek - Proposition 13 Survey Year: _____

Presence

Site ID _____ Date _____ Time _____ night day

Counts

Photo Id(s) _____

Adults _____ Tadpole _____
Metamorph _____ Eggmass _____

Adult Behavior

Adults calling/breeding In Water On Upland Habitat

Conditions

Habitat Disturbance _____

Habitat Type FWMarsh Mulefat Scrub Riparian Woodland Unvegetated Other _____

Other Aquatic Species (circle all that apply)

snakes newts fish crayfish belostamid beetles Asiann clams
Beaver sign Beavers (seen)

Site ID _____ Date _____ Time _____ night day

Counts

Photo Id(s) _____

Adults _____ Tadpole _____
Metamorph _____ Eggmass _____

Adult Behavior

Adults calling/breeding In Water On Upland Habitat

Conditions

Habitat Disturbance _____

Habitat Type FWMarsh Mulefat Scrub Riparian Woodland Unvegetated Other _____

Other Aquatic Species (circle all that apply)

snakes newts fish crayfish belostamid beetles Asiann clams
Beaver sign Beavers (seen)

Santa Maria Creek - Proposition 13 Survey Year: _____
Arroyo Toad Survey Form